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BOEING

News Release

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Boeing To Test Oxidizer Pump for Advanced Rocket Engine

(ST.LOUIS, MO., January 13, 2002) – On the heels of a successful series of pre-burner tests for the Air Force Research Laboratory's Integrated Powerhead Demonstration (IPD) at the Stennis Space Center (SSC) in Mississippi, the Rocketdyne Propulsion & Power (RPP) business of The Boeing Company will next turn its attention to hot fire testing of its oxidizer turbopump which will become part of the IPD engine system and provide key technologies for the RS-84 engine which is part of NASA's Space Launch Initiative .

In the previous test series, a Rocketdyne-built pre-burner, which provides gaseous oxygen to the oxidizer turbopump turbine drive, completed six of six tests, attaining flow rates at 95 percent of design maximum. In doing so, the pre-burner became the first component of its type to be operated successfully in the U.S.

"As far as we know, this is the first large-scale oxidizer-rich pre-burner to actually be hot-fire tested in the U.S.," said Bob Brengle, program manager for Rocketdyne's role in the IPD. "Smaller ones have been tested at Rocketdyne facilities, but this series of tests is a first for one of this magnitude." Brengle said that the goal of the test series was to characterize the pre-burner's "behavior" prior to its connection to the turbopump.

In the coming months Rocketdyne plans to attach the pre-burner to the new, Rocketdyne-built oxidizer turbopump, which is already at SSC, and perform a series of tests. Included on the turbopump are hydrostatic bearings that have no moving parts and are virtually friction-free. And a number of the internal parts use a new material that will help provide superior performance.

"This new turbopump could be a prototype for a whole new generation of rocket engines," said Steve Bouley, division director for advanced propulsion at Rocketdyne. "In future launch systems, there will continue to be a premium on low cost, simplicity of design and high reliability. We believe that this component hits the mark, and that the upcoming performance tests will bear that out."

"The IPD program supports the Department of Defense Integrated High Payoff Rocket Propulsion Technology (IHPRPT) program," said AFRL's Capt. Jeff Thornburg, IPD project manager. "The goal of this IHPRPT program is to satisfy our phase one milestones for doubling the capability of boost engines for access to space. IPD has also proven to be a very successful partnership between AFRL, Rocketdyne, NASA's Stennis Space Center, and NASA's Marshall Space Flight Center."

The IHPRPT program is the DoD/NASA/Industry coordinated effort to develop revolutionary and innovative technologies by the year 2010 that will permit a doubling of rocket propulsion capabilities over 1993 state-of-the-art technology.

Rocketdyne Propulsion & Power is a global leader in the design, development and manufacture of rocket propulsion and space power systems. In addition to the Space Shuttle Main Engine, Boeing Rocketdyne provides propulsion systems for Delta and Atlas launch vehicles.

A unit of The Boeing Company, Integrated Defense Systems is one the world's largest space and defense businesses. Headquartered in St. Louis, Boeing Integrated Defense Systems is a $23 billion business. It provides systems solutions to its global military, government and commercial customers. It is a leading provider of intelligence, surveillance and reconnaissance; the world's largest military aircraft manufacturer; the world's largest satellite manufacturer and a leading provider of space-based communications; the primary systems integrator for U.S. missile defense; NASA's largest contractor; and a global leader launch services.

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